

General

Title

Acute myocardial infarction (AMI)/chest pain: median time from ED arrival to ECG (performed in the ED prior to transfer) for AMI or chest pain patients.

Source(s)

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 11.0. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2018 Jan. various p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the time (in minutes) from emergency department (ED) arrival to electrocardiogram (ECG) (performed in the ED prior to transfer) for patients 18 years and older with acute myocardial infarction (AMI) or chest pain.

Rationale

Guidelines recommend patients presenting with chest discomfort or symptoms suggestive of ST-segment elevation myocardial infarction (STEMI) have a 12-lead electrocardiogram (ECG) performed within a target of 10 minutes of emergency department (ED) arrival (Krumholz et al., 2008). Evidence supports reperfusion benefits patients with identified STEMI (Antman et al., 2008). The diagnosis and management of STEMI patients is dependent upon practices within the ED. Timely ECGs assist in identifying STEMI patients and impact the choice of reperfusion strategy (Peacock et al., 2007). This measure will identify the median time to ECG for chest pain or acute myocardial infarction (AMI) patients and potential

opportunities for improvement to decrease the median time to ECG.

Evidence for Rationale

Antman EM, Hand M, Armstrong PW, Bates ER, Green LA, Halasyamani LK, Hochman JS, Krumholz HM, Lamas GA, Mullany CJ, Pearle DL, Sloan MA, Smith SC Jr, Anbe DT, Kushner FG, Ornato JP, Pearle DL, Sloan MA, Jacobs AK, Adams CD, Anderson JL, Buller CE, Creager MA, Ettinger SM, Halperin JL, Hunt SA, Lytle BW, Nishimura R, Page RL, Riegel B, Tarkington LG, Yancy CW, Canadian Cardiovascular Society, American Academy of Family Physicians, American College of Cardiology, American Heart Association. 2007 focused update of the ACC/AHA 2004 guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2008 Jan 15;51(2):210-47. [90 references] [PubMed](#)

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 11.0. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2018 Jan. various p.

Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, Ho PM, Kosiborod MN, Masoudi FA, Nallamothu BK, American College of Cardiology/American Heart Association Task Force on Performance Measures, American Academy of Family Physicians, American College of Emergency Physicians, American Association of Cardiovascular and Pulmonary Rehabilitation, Society for Cardiovascular Angiography and Interventions, Society of Hospital Medicine. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). *J Am Coll Cardiol*. 2008 Dec 9;52(4):2046-99.

O'Gara PT, Kushner FG, Ascheim DD, Casey DE Jr, Chung MK, de Lemos JA, Ettinger SM, Fang JC, Fesmire FM, Franklin BA, Granger CB, Krumholz HM, Linderbaum JA, Morrow DA, Newby LK, Ornato JP, Ou N, Radford MJ, Tamis-Holland JE, Tommaso JE, Tracy CM, Woo YJ, Zhao DX, CF/AHA Task Force. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: executive summary: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2013 Jan 29;127(4):529-55. [PubMed](#)

Peacock WF, Hollander JE, Smalling RW, Bresler MJ. Reperfusion strategies in the emergency treatment of ST-segment elevation myocardial infarction. *Am J Emerg Med*. 2007 Mar;25(3):353-66. [81 references] [PubMed](#)

Primary Health Components

Acute myocardial infarction (AMI); chest pain; angina; acute coronary syndrome; electrocardiogram (ECG)

Denominator Description

Included populations:

An *Evaluation and Management (E/M) Code* for emergency department (ED) encounter (as defined in Appendix A, OP Table 1.0 of the original measure documentation), and

Patients discharged/transferred to a short-term general hospital for inpatient care, or to a federal healthcare facility, and

An *International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)*

Principal Diagnosis Code for acute myocardial infarction (AMI) (as defined in Appendix A, OP Table 1.1 of the original measure documentation) or an *ICD-10-CM Other Diagnosis Codes* for angina, acute coronary syndrome, or chest pain (as defined in Appendix A, OP Table 1.1a of the original measure documentation), and

Patients receiving an *Electrocardiogram (ECG)* (as defined in the Data Dictionary)

See the related "Denominator Inclusions/Exclusions" field.

Numerator Description

Continuous variable statement: Time (in minutes) from emergency department (ED) arrival to electrocardiogram (ECG) (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or chest pain patients (with *Probable Cardiac Chest Pain* as defined in the Data Dictionary) (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

This measure is being collected by hospitals paid under the Outpatient Prospective Payment System; about 4,000 hospitals across the nation. The measure has been collected since April 1, 2008. In 2014, validity testing of critical data elements was performed on this measure for the measure period of January 1, 2012 to December 31, 2012.

Evidence for Extent of Measure Testing

Larbi F. Personal communication: CMS hospital outpatient department quality measures. 2014 Jul 24.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Emergency Department

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Timeliness

Data Collection for the Measure

Case Finding Period

Encounter dates: January 1 through December 31

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Diagnostic Evaluation

Encounter

Institutionalization

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

An Evaluation and Management (E/M) Code for emergency department (ED) encounter (as defined in Appendix A, OP Table 1.0 of the original measure documentation), and

Patients discharged/transferred to a short-term general hospital for inpatient care, or to a federal healthcare facility, and

An International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)

Principal Diagnosis Code for acute myocardial infarction (AMI) (as defined in Appendix A, OP Table 1.1 of the original measure documentation) or an *ICD-10-CM Other Diagnosis Codes* for angina, acute coronary syndrome, or chest pain (as defined in Appendix A, OP Table 1.1a of the original measure documentation), and

Patients receiving an *Electrocardiogram (ECG)* (as defined in the Data Dictionary)

Exclusions

Patients less than 18 years of age

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Continuous variable statement: Time (in minutes) from emergency department (ED) arrival to electrocardiogram (ECG) (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or chest pain patients (with *Probable Cardiac Chest Pain* as defined in the Data Dictionary)

Exclusions

None

Numerator Search Strategy

Encounter

Data Source

Administrative clinical data

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

- A software application designed for the collection and analysis of quality improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [QualityNet Web site](#) .
- Acute Myocardial Infarction (AMI) Hospital Outpatient Population Algorithm OP-1 through OP-5
- Algorithm Narrative for OP-1 through OP-5: AMI Hospital Outpatient Population
- OP-5: Median Time to electrocardiogram (ECG) Algorithm
- Algorithm Narrative for OP-5: Median Time to ECG
- Chest Pain Hospital Outpatient Population Algorithm OP-4 and OP5

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Mean/Median

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

OP-5: hospital outpatient acute myocardial infarction and hospital outpatient chest pain: median time to ECG.

Measure Collection Name

Hospital Outpatient Quality Measures

Measure Set Name

Acute Myocardial Infarction (AMI)

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Funding Source(s)

United States Department of Health and Human Services

Composition of the Group that Developed the Measure

The measure was developed by the Centers for Medicare & Medicaid Services (CMS) Contractor at the time, the Oklahoma Foundation for Medical Quality Contractor. The measure continues to be maintained by CMS and its current measure maintenance contractor, Mathematica Policy Research, in conjunction with a multi-disciplinary Technical Expert Panel.

Financial Disclosures/Other Potential Conflicts of Interest

None

Measure Initiative(s)

Hospital Compare

Hospital Outpatient Quality Reporting Program

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2018 Jan

Measure Maintenance

Twice yearly

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates a previous version: Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 9.0a. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2016 Jan 1. various p.

Measure Availability

Source available from the [QualityNet Web site](#) .

Check the QualityNet Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

NQMC Status

This NQMC summary was completed by ECRI Institute on February 20, 2009. The information was verified by the measure developer on May 8, 2009.

This NQMC summary was retrofitted into the new template on May 20, 2011.

This NQMC summary was updated by ECRI Institute on June 19, 2012. The information was verified by the measure developer on August 2, 2012.

This NQMC summary was updated by ECRI Institute on May 7, 2014. The information was verified by the measure developer on July 3, 2014.

This NQMC summary was updated by ECRI Institute on December 22, 2015. The information was verified by the measure developer on January 28, 2016.

This NQMC summary was updated again by ECRI Institute on January 16, 2018. The information was verified by the measure developer on February 7, 2018.

Copyright Statement

No copyright restrictions apply.

The Hospital Outpatient Quality Reporting Specifications Manual is periodically updated by the Centers for Medicare & Medicaid Services. Users of the Hospital OQR Specifications Manual must update their software and associated documentation based on the published manual production timelines.

Production

Source(s)

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 11.0. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2018 Jan. various p.

Disclaimer

NQMC Disclaimer

The National Quality Measures Clearinghouse[®] (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.

Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the [NQMC Inclusion Criteria](#).

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. Moreover, the views and opinions of developers or authors of measures represented on this site do not necessarily state or reflect those of NQMC, AHRQ, or its contractor, ECRI Institute, and inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.